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Losses of pigs in transit (daily data)

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Previous work (Ag Mem 534) suggested that the percentage of monthly losses were closely related to mean daytime temperature, and that the January-July period was slightly different to the "cooling-down" period of August to December.

Daily numbers of "Dead on Arrival" were available for 1971 & 1972; but it was not known how many pigs travelled on each day. These figures were, therefore, adjusted to a standard month, defined as the mean monthly total over the two years. This is clearly an approximation as the number per day is not likely to be constant.

The mean daytime temperature was found on each day and the DOA figures summed for each 1°C interval. Sunshine hours did not seem to have any obvious effect, but there was a suggestion that high night minima were significant. This latter effect, if any, would be incorporated in the chosen parameter "mean daytime temperature", but it may imply a high humidity effect.

In order to smooth out the variations in total pigs in transit and take into account the imprecise nature of temperatures observed at a single station, the analysis proceeded by finding overlapping means at 5°C intervals; the loss factor "d" was then taken to be the mean DOA figure per day.

The results were:

	January-July		August-December		Whole Year	
Range (°C)	Occasions	d	Occasions	d	Occasions	d
-6 to -1	6	0.36			6	0.36
-5 to 0	7	0.43			7	0.43
-4 to 1	11	0.46			14	0.36
-3 to 2	14	0.44			23	0.31
-2 to 3	20	0.61			33	0.39
-1 to 4	36	0.42			56	0.34
0 to 5	53	0.43	28	0.29	81	0.38
1 to 6	77	0.45	42	0.45	119	0.45
2 to 7	109	0.53	50	0.47	159	0.51
3 to 8	130	0.47	60	0.50	190	0.48
4 to 9	134	0.52	66	0.54	200	0.52
5 to 10	136	0.55	69	0.58	205	0.56
6 to 11	124	0.60	68	0.53	192	0.57
7 to 12	110	0.57	71	0.46	181	0.53

These figures suggested that in the temperature range -6° to 2°C, the losses were low (0.38) and independent of temperature. Between 2° and 9°C there was a slow increase of losses with increase of temperature; the correlation was 0.90 and the equation 0.03 T + 0.31 taking both periods of the year together, as any difference seems insignificant.